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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,819

11/14/2003

Eisuke Wadahara

1402-03

2568

35811 7590 12/16/2008  
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EXAMINER

PIZZALI, ANDREW T

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

12/16/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/713,819

**Applicant(s)**

WADAHARA ET AL.

**Examiner**

Andrew T. Piziali

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 October 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-19, 22 and 46 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 15-19, 22 and 46 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/9/2008 has been entered.

***Terminal Disclaimer***

2. The terminal disclaimer filed on 10/9/2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of USPN 7,138,345 has been reviewed and is accepted. The terminal disclaimer has been recorded.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15-17, 19, 22 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/004758 to Wadahara (USPN 7,138,345 to Wadahara is cited as a translation document) in view of USPN 3,881,522 to Lewis.

Wadahara discloses a preform comprising a thermosetting resin as a matrix resin; a plurality of stacked and integrated substrates including at least one reinforcing carbon fiber substrate comprising a reinforcing carbon fiber yarn group arranged with reinforcing carbon fiber yarns having a yield of 350 to 3,500 tex in parallel to each other in a warp-direction, and a weft-direction auxiliary yarn group formed by auxiliary yarns extending in a direction across said reinforcing carbon fiber yarns and having a yield of 1% or less of the yield of said reinforcing carbon fiber yarn, and having a yield of 2 tex or less; and a powder-interlamina-toughening resin material containing thermoplastic polyetherimide, polyphenyleneether or polyethersulfone as a main constituent provided at 2 to 17 % by weight and studded at least on a surface of said reinforcing carbon fiber substrate (see entire document including column 3, lines 33-55, column 9, lines 51-61, column 10, lines 36-65, column 11, lines 13-26, column 13, lines 26-63, and column 19, lines 62-65).

Wadahara appears to be silent with regards to specific gap distances, therefore, it would have been obvious to look to the prior art for conventional gap distances. Lewis provides this conventional teaching showing that it is known in the art to vary the gap distance based on the desired flexibility and pliability (see entire document including column 3, lines 12-21). Lewis specifically mentions a gap distance of 1.6 mm (see column 6, lines 16-33), but Lewis does not limit the gap to this distance. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the distance between adjacent reinforcing fibers, such as from 0.1 to 1 mm, because the gap distance determines the flexibility and pliability of the fabric and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding the claimed properties, considering that the preform taught by the applied prior art is substantially identical to the claimed reinforcing fiber substrate (unidirectional reinforcing fiber structure comprising weft auxiliary yarns aligned in a specific orientation in a specific amount and also comprising resin in a specific shape and in a specific amount), it appears that if the composite reinforcing fiber volume fraction was 53 to 65% it would inherently possess the claimed properties.

Regarding claims 16 and 17, Wadahara discloses the claimed warp-direction and weft-direction auxiliary yarns (column 11, lines 31-43).

Regarding claim 19, Wadahara discloses that the mean diameter of the studded resin is 1 mm or less (paragraph bridging columns 8 and 9).

Regarding the claim 22, considering that the preform taught by the applied prior art is substantially identical to the claimed reinforcing fiber substrate (unidirectional reinforcing fiber structure comprising weft auxiliary yarns aligned in a specific orientation in a specific amount and also comprising resin in a specific shape and in a specific amount), it appears that if the composite reinforcing fiber volume fraction was 53 to 65% it would inherently possess the claimed properties.

Regarding claim 46, Wadahara discloses that the thermosetting resin may be epoxy resin or the like (column 11, lines 13-26).

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/004758 to Wadahara (USPN 7,138,345 to Wadahara is cited as a translation document) in view of USPN 3,881,522 to Lewis as applied to claims 15-17, 19, 22 and 46 above, and further in view of USPN 5,132,394 to Bockrath.

Wadahara does not appear to specifically mention a sizing agent, but Bockrath discloses that it is known in the reinforcing fiber fabric art to apply a sizing agent to fibers to facilitate the weaving process and to avoid or minimize loss of fiber properties (see entire document including column 10, lines 29-38). It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a sizing agent to the auxiliary fibers, because the sizing agent would facilitate the weaving process and would avoid or minimize loss of fiber properties.

#### ***Response to Arguments***

6. Applicant's arguments filed 10/9/2008 have been fully considered but they are not persuasive.

The applicant asserts that the article disclosed by Lewis is used differently than the claimed article. Applicant's argument is not persuasive because a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The applicant asserts that there is no incentive to combine Wadahara with Lewis, because Lewis relates to an article with a low warp to fill weight ratio. The examiner respectfully disagrees. In response to applicant's argument that Lewis is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Lewis is in the field of applicant's endeavor which is fiber reinforced composite materials.

The applicant asserts that Lewis fails to teach or suggest the claimed mean gap distance of 0.1 to 1 mm because Lewis specifically mentions a gap distance of 1.6 mm. The examiner respectfully disagrees. The cited gap distance of 1.6 mm is mentioned by Lewis as an example (see column 6, lines 16-33). Lewis discloses that it is known in the art to vary the gap distance based on the desired flexibility and pliability (see entire document including column 3, lines 12-21). Therefore, although Lewis specifically mentions a gap distance of 1.6 mm, Lewis does not limit the gap to this distance. It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the distance between adjacent reinforcing fibers, such as from 0.1 to 1 mm, because the gap distance determines the flexibility and pliability of the fabric and because it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew T Piziali/  
Primary Examiner, Art Unit 1794